Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII (OLD) - EXAMINATION – SUMMER 2017

Subject Code:182401 **Date:02/05/2017**

Subject Name: Power Electronics Applications in Power System

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Enlist various FACTS Controller & State advantages of each.	**07**
	(b)	Explain basic block arrangement for interconnection of renewable energy sources to utility grid in brief.	**07**
Q.2	**(a)**	Discuss power quality standards. Explain IEEE 519 standard in brief.	**07**
	(b)	In accordance with HVDC converter define following terms (1) Firing Angle (2) Overlap Angle (3) Extinction Angle.	**07**
		OR	
	(b)	Enlist & Explain various possible configuration of HVDC system.	**07**
Q.3	**(a)**	Draw & Explain 12 pulse AC-DC converter used in HVDC system.	**07**
	(b)	Define THD. List and Explain need for improved utility interface.	**07**
		OR	
Q.3	**(a)**	Discuss Control of HVDC in brief.	**07**
	(b)	Explain interface for a bidirectional power flow converter with necessary Diagrams.	**07**
Q.4	**(a)**	Enlist & discuss various traditional methods of VAR generation.	**07**
	(b)	Explain the basic operating principle, characteristics and applications of STATCOM.	**07**
		OR	
Q.4	**(a)**	Explain the basic operating principle, characteristics and applications of SSSC.	**07**
	(b)	Explain Unified Power Flow Controller (UPFC) for Flexible AC Transmission.	**07**
Q.5	**(a)**	Enumerate the advantages of static relays over electromagnetic relays. Also specify the limitations of static relays.	**07**
	(b)	Discuss in brief : FC-TCR	**07**
		OR	
Q.5	**(a)**	Explain directional static over current relay with neat block diagram.	**07**
	(b)	Write a short note on TSC-TCR.	**07**

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